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SEQUENCE LISTING

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JUL 29 2002

TECH CENTER 1600/2300

<110> Mitchell, Lloyd G.
Garcia-Blanco, Mariano A.
Puttaraju, Madaiah
Mansfield, Gary S.

<120> METHODS AND COMPOSITIONS FOR USE IN
SPLICEOSOME MEDIATED RNA TRANS-SPLICING IN PLANTS

<130> A31304-B-A-C 072874.0138

<140> 09/756,097

<141> 2001-01-08

<150> 09/158,863

<151> 1998-09-23

<150> 09/133,717

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<150> 08/766,354

<151> 1996-12-13

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<210> 20
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<210> 21

<211> 21

<212> DNA

<213> *Corynebacterium diphtheriae*

<400> 21

catcgtcata atttccttgt g

21

<210> 22

<211> 20

<212> DNA

<213> *Corynebacterium diphtheriae*

<400> 22

atggaatcta cataaccagg

20

<210> 23

<211> 20

<212> DNA

<213> *Corynebacterium diphtheriae*

<400> 23

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20

<210> 24

<211> 20

<212> DNA

<213> *Homo sapien*

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cggcaccgtg gccgaagtgg

20

<210> 25

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<212> DNA

<213> *Homo sapien*

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Escherichia coli lacZ gene

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<210> 30
<211> 38
<212> DNA
<213> Artificial Sequence

<220>

<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 30

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38

<210> 31

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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38

<210> 32

<211> 47

<212> DNA

<213> Artificial Sequence

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<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 32

gcatggtaac cctgcagggc ggcttcgtct aataatggga ctgggtg
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<210> 33

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

<400> 33

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37

<210> 34

<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

<400> 34
ctgactgcag ggtaaccgga caaggacact gcttcacc
38

<210> 35
<211> 35
<212> DNA
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<220>
<223> Oligonucleotide primer complimentary to the beta
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35

<210> 36
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<212> DNA
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<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

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ctgaaagctt gttaaccagc tcaccatggt ggggcag
37

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<211> 22
<212> DNA
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<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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22

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<400> 38
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21

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Escherichia coli lacZ gene

<400> 39
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<213> Homo sapien

<400> 40
acctgggccc acccattatt aggtcattat ccgcggaaca ttata
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<210> 41
<211> 35
<212> DNA
<213> Homo sapiens

<400> 41
acctctgcag gtgaccctgc aggaaaaaaa agaag
35

<210> 42

<211> 30
<212> DNA
<213> Homo sapiens

<400> 42
acctctgcag acttcacttc taatgatgat
30

<210> 43
<211> 51
<212> DNA
<213> Homo sapien

<400> 43
acctgcggcc gcctaataatgat gatgatgatg atgctcttct agttggcatg c
51

<210> 44
<211> 32
<212> DNA
<213> Homo sapien

<400> 44
gacctctcga gggatttggg gaattatttg ag
32

<210> 45
<211> 35
<212> DNA
<213> Homo sapien

<400> 45
ctgacctgcg gccgctacag tggtgaatgt ggtgc
35

<210> 46
<211> 35
<212> DNA
<213> Homo sapien

<400> 46
ctgacctgcg gccgccaac tatctgaatc atgtg
35

<210> 47
<211> 32
<212> DNA
<213> Homo sapien

<400> 47
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32

<210> 48
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ctaatgatga tgatgatgat g
21

<210> 49
<211> 21
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21

<210> 50
<211> 21
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cttcttggtta ctctgtcct g
21

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gacctctcga gggatttggg gaattatttg ag
32

<210> 52
<211> 21
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<400> 52
aactagaagg cacagtcgag g

21

<210> 53
<211> 24
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<220>
<223> trans-spliced product containing Human chorionic gonadotropin gene 6 sequences and Corynebacterium diphtheriae diphtheria toxin A sequence

<400> 53
gagatgttcc agggcgtgat gatg
24

<210> 54
<211> 127
<212> RNA
<213> Artificial Sequence

<220>
<223> PTM intramolecular base paired stem

<221> misc_feature
<222> (57)...(70)
<223> Loop comprising a combination of 14 nucleotides according to specification

<400> 54
gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn
60
nnnnnnnnnn aucguuaacu aaauaacuac uaacugggug aacuucuguu uuuuucucga
120
gcugcag
127

<210> 55
<211> 127
<212> RNA
<213> Artificial Sequence

<220>
<223> PTM intramolecular base paired stem

<221> misc_feature
<222> (57)...(70)
<223> Loop comprising a combination of 14 nucleotides

according to specification

<400> 55

gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn
60
nnnnnnnnnn aucguuaacu aaauaacuac uaacuggggug aacuucugua uuauucucga
120
gcugcag
127

<210> 56

<211> 127

<212> RNA

<213> Artificial Sequence

<220>

<223> PTM intramolecular base paired stem

<221> misc_feature

<222> (57)...(70)

<223> Loop comprising a combination of 14 nucleotides
according to specification

<400> 56

gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn
60
nnnnnnnnnn aucguuaacu aaauaacuac uaacuggggug aaguucuguc cuugucucga
120
gcugcag
127

<210> 57

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> trans-spliced product containing Human chorionic
gonadotropin gene 6 sequences and Corynebacterium
diphtheriae diphtheria toxin A sequences

<400> 57

caggggacgc accaaggatg gagatgttcc agggcgctga tgatgttggtt gattcttctt
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120
tccattcaaa aa
132

<210> 58
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial Sequence derived from Escherichia coli
lacZ gene

<400> 58
gaattcggta ccatgggg
18

<210> 59
<211> 33
<212> DNA
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<220>
<223> Artificial Sequence derived from Escherichia coli
lacZ gene

<400> 59
cgtttacagg taagaggatc ctccggaggg ccc
33

<210> 60
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial Sequence derived from Escherichia coli
lacZ gene

<400> 60
tggtgtcaaa aataataagt taacaagctt
30

<210> 61
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Escherichia coli
lacZ gene sequences and Human chorionic

gonadotropin gene 6 exon 2 sequences

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<210> 62

<211> 286

<212> DNA

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<220>

<223> trans-spliced product containing Escherichia coli
lacZ gene sequences

<400> 62

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120
aggcgggctt cgtctaataa tgggactggg tggatcagtc gctgattaaa tatgatgaaa
180
acgggcaacc cgtggtcggc ttacggcggg gatcttggcg atacgccgaa cgatcgccag
240
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286

<210> 63

<211> 196

<212> DNA

<213> Artificial Sequence

<220>

<223> trans-spliced product containing Escherichia coli
lacZ gene sequences

<400> 63

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aggggctgct gctgttgctg ctgctgagca tgggcgggac atgggcatcc aaggagccac
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ttcggccacg gtgccg
196

<210> 64

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<223> trans-spliced product comprising cystic fibrosis
transmembrane regulator-derived sequences and His
tag sequence

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<211> 20

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<223> Splice junction sequence

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<211> 7

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<223> C terminal residues from glutathione -S-
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<400> 66

Asp Tyr Lys Asp Asp Asp Lys

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5

<210> 67

<211> 15

<212> DNA

<213> Artificial Sequence

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<223> Artificial sequence comprising sequences derived
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<400> 67

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15

<210> 68

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

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<400> 68

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37

<210> 69

<211> 120

<212> DNA

<213> Artificial Sequence

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<223> Binding domain of PTM

<400> 69

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60

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120

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<211> 24

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<223> Spacer sequence of PTM

<400> 70

aacattatta taacgttgct cgaa

24

<210> 71

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Branch point, pyrimidine tract and acceptor splice
site of PTM

<400> 71

tactaactgg tacctcttct tttttttttg atatcctgca gggcggc

47

<210> 72

<211> 70

<212> DNA

<213> Artificial Sequence

<220>

<223> Donor site and spacer sequence of PTM

<400> 72

tgaacggtaa gtgttatcac cgatatgtgt ctaacctgat tcgggccttc gatacgctaa

60

gatccaccgg

70

<210> 73

<211> 260

<212> DNA

<213> Artificial Sequence

<220>

<223> Binding domain of spacer sequence

<400> 73

tcaaaaagtt ttcacataat ttcttacctc ttcttgaatt catgctttga tgacgcttct

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gtatctatat tcatcattgg aaacaccaat gatttttctt taatgggtgcc tggcataatc

120

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aactcattat caaatcacgc
260

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<211> 22
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<220>
<223> Oligonucleotide primer

<400> 74
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22

<210> 75
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 75
actcagtgtg attccacctt ctc
23

<210> 76
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 76
gacctctgca gacttcactt ctaatgatga ttatgg
36

<210> 77
<211> 33
<212> DNA
<213> Artificial Sequence

<220>

<223> Oligonucleotide primer

<400> 77

ctaggatccc gttcttttgt tcttcactat taa
33

<210> 78

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide primer

<400> 78

ctaggggttac cgaagtaaaa ccatacttat tag
33

<210> 79

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide primer

<400> 79

gcatgggttac cctgcagggg ctgctgctgt tgctg
35

<210> 80

<211> 37

<212> DNA

<213> Artificial Sequence

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<223> Oligonucleotide primer

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<210> 81

<211> 23

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<223> Binding domain of PTM molecule

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<210> 82
<211> 22
<212> DNA
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<220>
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gatcaaattct gtcgatacctt cc
22

<210> 83
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<212> DNA
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<220>
<223> Oligonucleotide primer

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ctgatccacc cagtcccatt a
21

<210> 84
<211> 22
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<223> Oligonucleotide primer

<400> 84
gactgatcca cccagtcca ga
22

<210> 85
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<223> Random sequence inserted to replace 3' splice site

<221> misc_feature

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<400> 85

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52

<210> 86

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 86

ttttatcccc gtttacaggg cggcttcgtc tgggactggg tggatcagtc gctgattaaa
60
tatgatgaaa a
71

<210> 87

<211> 66

<212> DNA

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<223> Oligonucleotide

<400> 87

tttggcgata cgccgaacga tcgccagttc tgtatgaacg gtctgggtctt tgccgaccgc
60
acgccg
66

<210> 88

<211> 192

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<223> PTM sequences

<400> 88

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tccggccgca tcagcttttg cagccaattc agttggatca tgcccgggtac catcaaggag
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cagttggagg ag
192

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gagaacataa tcttcggcgt cagttacg
28

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<400> 91
gtcagttgga ggaggacatc tccaagtttg
30

<210> 92
<211> 192
<212> DNA

<213> Artificial Sequence

<220>

<223> PTM exon 10

<400> 92

acgagcttgc tcatgatgat catgggcgag ttagaacc aa gtgaaggcaa gatcaa acat
60

tccggccgca tcagcttttg cagccaattc agttggatca tgcccggtag catcaaggag
120

aacataatct tcggcgtcag ttacgacgag taccgctatc gctcggatgat taaggcctgt
180

cagttggagg ag

192

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<211> 27

<212> DNA

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<220>

<223> PTM sequences

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aaatatcatt ggtgttttctt atgatga

27

<210> 94

<211> 30

<212> DNA

<213> Artificial Sequence

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<223> Oligonucleotide

<400> 94

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30

<210> 95

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 95

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30

<210> 96
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<220>
<223> Oligonucleotide

<400> 96
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27

<210> 97
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 97
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27

<210> 98
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> 5' splice site

<400> 98
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21

<210> 99
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> 3' splice site

<400> 99

ctgcagggcg gcttcgtcta ataatgg
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<210> 100

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Sequence from trans-splicing domain

<400> 100

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47

<210> 101

<211> 1584

<212> DNA

<213> Artificial Sequence

<220>

<223> CFTR PTM

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120
ccttctgttg attctgctga caatctatct gaaaaattgg aaagagaatg ggatagagag
180
ctggcttcaa agaaaaatcc taaactcatt aatgcccttc ggcgatgttt tttctggaga
240
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300
ttactgggaa gaatcatagc ttcctatgac ccggataaca aggaggaacg ctctatcgcg
360
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420
gccatthttg gcctthcatca cattggaatg cagatgagaa tagctatgtt tagthttgatt
480
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600
gtgtggatcg thctthtgca agtggcactc thcatggggc thaatctggga gthgtthacag
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720

gggagaatga tgatgaagta cagagatcag agagctggga agatcagtga aagacttgtg
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 840
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 1020
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 1440
 aagatcaaac attccggccg catcagcttt tgcagccaat tcagttggat catgcccggg
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 1560
 attaaggcct gtcagttgga ggag
 1584

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<211> 323

<212> DNA

<213> Artificial Sequence

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<223> trans-splicing domain of CFTR PTM

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 120
 ctgtatctat attcatcatt ggaacaccca atgatatttt ctttaattgg gcctggcata
 180
 atcctggaaa actgataaca caatgaaatt cttccactgt gcttaatttt accctctgaa
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ttctccattt ctcccataat catcattaca actgaactct ggaaataaaa cccatcatta
300
ttaactcatt atcaaatacac gct
323

<210> 103
<211> 165
<212> DNA
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<220>
<223> PTM binding domain

<400> 103
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cctaagcaga agtgtatatt cttatttgta aagattctat taactcattt gattcaaaat
120
atttaaaata cttcctggtt cacctactct gctatgcacc cgcg
165

<210> 104
<211> 225
<212> DNA
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<220>
<223> trans-splicing domain of CFTR PTM

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120
aaatacttcc tgtttcacct actctgctat gcacccgcgg aacattatta taacgttgct
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cgaatactaa ctggtacctc ttcttttttt tttgatatcc tgcag
225

<210> 105
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<212> DNA
<213> Artificial Sequence

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<223> CFTR PTM sequence

<400> 105

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aatatcatct ttggtgtttc ctatgatgaa tatagataca gaagcgtcat caaagcatgc
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gatgctgatt tgtattttatt agactctcct tttggatacc tagatgtttt aacagaaaaa
360
gaaatatttg aaagctgtgt ctgtaaactg atggctaaca aaactaggat tttggctact
420
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480
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660
caatctttta aacagactgg agagtttggg gaaaaaagga agaattctat tctcaatcca
720
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1440

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3000

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3060

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3069